

**Direct Rebuttal Testimony of William D. Orr**  
For the Gregg Hill Residents

**Identification of witness and qualifications**

Q1. Please state your name, position, and qualifications.

A1. My name is William D. (Bill) Orr, and I represent the nine landowners, including myself, known in PSB Docket 7032 as the Gregg Hill Residents.

Q2. Have you testified before this Board before?

A2. Yes.

**Overview**

Q3. What are the purposes of your testimony?

A3. They are:

- To review direct testimonies, interrogatories, and responses to interrogatories pertaining to the rerouting of the VELCO-proposed 34.5 kV/115 kV corridor as proposed by the Gregg Hill Residents..
- In the light of those testimonies, to renew our argument that the routing of the new 34.5 kV/115 kV lines as proposed would have an undue adverse aesthetic effect on the Gregg Hill neighborhood, per 30 V.S.A. §248 subdivision (b) (5), and that our proposed rerouting will remedy those adverse effects and in fact improve the aesthetic qualities of the Gregg Hill neighborhood relative to the *status quo ante*.
- In the light of those testimonies, to renew our argument that the Gregg Hill Residents' proposed routing of the new 34.5 kV/115 kV corridor will have a positive effect on the economies of the region and the state, per 30 V.S.A. §248 subdivision (b)(4).

**Testimonies, interrogatories, and responses concerning aesthetic impacts of LCP**

Q4. Please review the testimonies, interrogatories, and responses to date between Gregg Hill Residents and VELCO that touch on aesthetic impacts of the LCP as proposed by VELCO.

A4. These are discussed in the following paragraphs.

In the prefiled testimony of Terrence J. Boyle and Adam M. Portz on December 6, 2004, page 3, lines 25-26, the witnesses state that their report concludes the the LCP will create an adverse effect on the surrounding landscape in several specific areas, among them Gregg Hill Road from mile 5.3 to 5.6. In the same testimony, page 4, lines 7 to 10, the witnesses are asked if their report concludes that the LCP has been designed to satisfy criterion 8, the Quechee Test. They reply: "Yes. As outlined above, we believe this Project meets the Quechee Test, or standard, in that it does not have an **undue** adverse impact on aesthetics." Emphasis added, since they have previously found that the project does have an adverse effect on aesthetics. They argue that taking "reasonable mitigating measures" will remedy those adverse effects and that "the proposed LCP in these locations would not shock and/or offend the average person."

Miles 5.3 to 5.6 include properties of two members of Gregg Hill Residents group, namely those of Boschen and Bieler. The former is an undeveloped scenic viewshed dedicated by the owner to family and public enjoyment. The latter is a wildlife refuge preserved by the owner for public interest and enjoyment. The LCP plan calls for replacing the single 34.5 kV line (poles approximately 35 feet high) with two lines, one of them at least twice as high and quite likely to protrude above the ridgeline in some sections. We submit that planting mature trees to shield the new poles will not only be impractical but will be unharmonious with the natural setting of both viewsheds. Our proposed rerouting will take the power lines behind the ridge and completely out of sight. We submit that our route will not only remedy the adverse effects of the LCP proposal,

1 but will also result in a viewshed that is more aesthetically fitting to its environment than  
2 the viewshed is now the case.

3  
4 The Boyle/Portz report does not recognize what we consider undue adverse effects of the  
5 LCP on properties between Miles 4.2 and 4.3, owned by Magdamo-Abraham, Bankson,  
6 and Orr. In the LCP as proposed, poles and lines as high as 80 feet would rise very close  
7 to the Bankson and Orr dwellings—75 feet from Bankson and 112 feet from Orr. Equally  
8 tall poles would change the feel from Gregg Hill Road from rural to industrial, and would  
9 present Magdamo-Abraham with an unsightly view of six or more power cables from  
10 their living room. Likewise, the proposed LCP would more than double the intrusiveness  
11 of the power corridor into the daily lives of the Lillis and Spurr landowners. We submit  
12 that our proposed rerouting will not only obviate those adverse effects, but, by  
13 eliminating the existing 34.5 kV corridor, will also enhance the aesthetic qualities of the  
14 Gregg Hill neighborhood.

15  
16 In testimony dated March 28, 2005, responding to an information request by the Agency  
17 of Natural Resources for VELCO documents relating to the alternative rerouting  
18 proposed by the Gregg Hill Residents, Boyle/Portz “conceptually reviewed the three [sic]  
19 initial alternatives” proposed by our group. They stated that “VELCO and consultants  
20 are undertaking further review of the Gregg Hill Residents’ proposals.”

21  
22 I take this occasion to clarify the reference to “three initial proposals” of the Gregg Hill  
23 Residents. There is, and always has been, only one rerouting proposal before the Board.  
24 Boyle/Portz are referring to alternative routes offered to VELCO by three Gregg Hill  
25 landowners **before** VELCO submitted its proposal to the Board. At that time, the LCP  
26 proposal was for a 150-foot right-of-way. After the submission of VELCO’s present plan,  
27 which calls for a 100-foot ROW, the three landowners dropped two of their informal  
28 proposals and joined with (ultimately) six other Gregg Hill landowners to submit our  
29 present rerouting proposal.

1 In testimony dated March 28, 2005, Kim Moulton responded to an information request by  
2 DPS about VELCO's evaluation of "the alternative route proposed by the group  
3 represented by Mr. Orr." Because of the critical importance of Ms. Moulton's response, I  
4 reproduce it here in full:

5  
6 *VELCO has performed preliminary evaluation of the proposed reroute in the Gregg Hill*  
7 *area just north of the Waterbury Reservoir. This evaluation is ongoing. At this time*  
8 *VELCO is waiting for notification from the ANR on their opinion of the easement "swap"*  
9 *needed on the State Forest property just south of the Abraham's property. VELCO has*  
10 *performed surveying and has requested its consultants to analyze the overall feasibility of*  
11 *the proposed reroute and whether they saw any "show stoppers" to the proposal. At this*  
12 *time VELCO has not been informed of any serious concerns from its consultants. There*  
13 *may be environmental issues facing the most northern portion of the reroute due to*  
14 *wetlands. VELCO does see the benefit of such a reroute and continues to work with the*  
15 *land owners in this area to develop a plan that will meet as many of their needs as*  
16 *possible. At the same time however, VELCO will not support any reroutes that will*  
17 *require Legislative approval that would postpone the construction of the Project, delay*  
18 *its in-service date, and expose the system to unacceptable reliability performance.*

19  
20 Q5. Have there been any other testimonies from VELCO that pertain to the  
21 alternative routing proposed by Gregg Hill Residents?

22 A5. No.

23  
24 Q6. Please respond to Ms. Moulton's statements about notification from the ANR  
25 on that agency's opinion of the easement "swap" needed on the State Forest  
26 property, and her concluding statement that VELCO will not support any  
27 reroutes that will require Legislative approval that would postpone the  
28 construction of the Project, etc.

29 A6. I have the highest level of confidence that both of the conditions attached to  
30 VELCO's approval will be fully satisfied with the passage of JRH40 by the

1 Vermont legislature and its approval by the governor. That resolution, which  
2 explicitly addresses Ms. Moulton's concerns, was passed by the House on  
3 May 3 and at this writing is under consideration in the Senate. I do not include  
4 it here because it may be reworded in the Senate or in conference.

5  
6 Q7. Are there any testimonies, interrogatories, or responses from the Department  
7 of Public Service that pertain to the proposal of the Gregg Hill Residents?

8 A7. Yes.

9  
10 The booklet *Aesthetic Assessment and Recommendations*, prepared by LandWorks for  
11 DPS as an exhibit attached to DPS testimony dated April 2005, is a booklet of 126 pages  
12 plus exhibits. It illustrates, discusses, and makes recommendations regarding the aesthetic  
13 aspects of the LCP. I excerpt here the sections that pertain to the Gregg Hill area.

14  
15 Page 7:

16 *Overall, the region [of the LCP] is one which often contains long distant views with the*  
17 *classic Vermont pastoral qualities and mountain backdrops. As an area that is visited by*  
18 *tourists and relies on this economy, and as a region with a rich culture and historic*  
19 *settlement patterns, the potential exists for undue, adverse impacts from this project*  
20 *absent appropriate mitigation.*

21  
22 Pages 24-25

23 ***Miles 4.0 to mile 5.7 Gregg Hill Area***

24 *At the point at which the transmission corridor emerges from the State Forest to cross*  
25 *and then parallel Gregg Hill Road, it proceeds northerly and traverses near a cluster of*  
26 *homes (mile 4.1 and 4.3) as it crosses again. At that point it parallels the road until it*  
27 *enters a wooded area at mile 5.0. This area is scenic and has a rural feel of woodlands*  
28 *and open pastures, treelines and hedgerows, which will be adversely impacted by the*  
29 *presence of the two lines and with new poles at a minimum approximately 10 to 20 feet*  
30 *higher than at present. This factor and the proposed increased clearing and removal of*

1 *mature trees and screening trees, which currently deemphasize the corridor, will shock*  
2 *[sic!] the average person and necessitate sufficient mitigation measures.*

3  
4 *The existing vegetation is very important to the mitigation of the aesthetic impacts and*  
5 *visible presence of the 34.5 kV line as it exists today. Thus, retention of and additions to*  
6 *this vegetation become even more important with the proposed upgrades. At mile 5.0 the*  
7 *corridor is mitigated by its route through a wooded area, and again at mile 5.4 to 5.7 the*  
8 *corridor becomes more visible with a greater potential for impact if the line's impact is*  
9 *not reduced. At mile 5.7 the corridor heads up hill to the northwest and becomes less*  
10 *visible and topography helps to separate it from the roadside view. Limited clearing and*  
11 *lower pole heights are desirable in these locations. There are reasonable and available*  
12 *mitigation measures, which have not been presented by VELCO but which can avoid an*  
13 *undue adverse impact.*

14  
15 ***Mitigation Recommendations***

16 *To avoid an undue, adverse determination all of the following steps are necessary to*  
17 *satisfy the Quechee standard:*

- 18 *(1) Employment of the single pole configuration options as proposed in George*  
19 *Smith's Testimony for DPS to limit height and visibility of the line and its*  
20 *structures as it crosses the open and settled areas, either in front of or behind the*  
21 *homes.*
- 22 *(2) Poles need to be set back as far a feasible from the Gregg Hill Road crossing at*  
23 *mile 5.7 to minimize their visibility and vegetative plugs employed here as well;*  
24 *and,*
- 25 *(3) A detailed plan for screen planting and buffering for all impacted residences,*  
26 *along with careful delineation of existing screen and buffer vegetation and how to*  
27 *protect/retain existing and important wooded areas and individual trees.*

**Discussion of the booklet's assessments and recommendations**

We enthusiastically endorse this report. I think it not only accurately describes the impact of the LCP on the Gregg Hill area, but also conveys the feeling that Gregg Hill Residents have for the outstanding aesthetic qualities of the area.

The portion of the corridor that is involved in the rerouting proposed by Gregg Hill Residents is indicated on VELCO maps as Miles 4.2 to 5.7. Approximately 800 feet of Mile 4.2 are located in the Mansfield State Forest. Our proposed alternative corridor runs through approximately 900 feet in the Mount Mansfield State Forest. For almost all of that new corridor, the transmission lines will be out of sight of Gregg Hill Road. We submit that this rerouting will improve the aesthetics of the state forest by removing from the Gregg Hill viewshed about 800 feet of the existing corridor with the 35-foot-high 34.5 kV line that now runs in the state forest along the roadside—a single line which, under the VELCO proposal, would be replaced by two lines, with one pole twice as high as the existing one.

Most likely none of the transmission lines on our proposed corridor will be visible from Gregg Hill Road nor from the affected dwellings. The only certain exception is at the northern boundary of the Bieler property at Mile 5.6, where the new corridor will cross Gregg Hill Road and join the existing (and new LCP) corridor. In our proposal, at the northern end of the Bieler property, the rerouted lines will run perpendicular to Gregg Hill Road, rather than diagonally across the wildlife preserve.

The rerouting proposed by Gregg Hill Residents will meet all three of DPS's mitigation recommendations by placing the transmission corridor hundreds of feet farther east of Gregg Hill Road. If our proposed reroute is adopted, all questions of undue adverse aesthetic effects will be resolved for:

- Preserving the rural-residential character of Gregg Hill Road;
- Six residential properties through which the existing and VELCO-proposed corridors now do and will run;

- 1           ▪ One property adjacent to a much-admired view;
- 2           ▪ One property preserved by its owner for that much-admired view;
- 3           ▪ One property preserved by its owner as a wildlife refuge.

4

5   **Testimonies, interrogatories, and responses concerning economic impacts of LCP**

6           Q8. In general, what are the effects of the Gregg Hill Residents' proposed

7           rerouting on the economies of the region and the state?

8           A8. I see two main effects:

- 9           ▪ By implementing a solution for the Gregg Hill area that can accommodate
- 10          future upgrades of the LCP's new lines, utility ratepayers will be spared
- 11          future costs associated with planning a new corridor and dealing with
- 12          landowner objections to the undue adverse aesthetic impact of additional
- 13          electric power lines in a social environment that most likely will be even
- 14          more intolerant of such nonconforming, visually unattractive structures.
- 15          ▪ The economic benefits of LCP will be increased by implementing a
- 16          solution for the Gregg Hill area that obviates the loss of property wealth
- 17          and associated state and local tax revenues.

18

19          Q9. Have any testimonies, interrogatories, or responses touched on your first

20          point?

21          A9. No. I think we may be moving into uncharted territory. I point out that the

22          Board has admonished VELCO to improve its long-range planning through

23          measures such as alternative energy sources, demand management, and

24          distributed generation.

25

26          In response to an interrogatory by the Lamoille County Planning Commission

27          asking Kim Moulton: *What is the "transmission master plan" for Lamoille*

28          *County and northern Vermont and how is it supported by the State's energy*

29          *policies?* Ms Moulton replied (March 25, 2005, page 3) that *While the future*

30          *transmission system enhancements are not known specifically today, they will*



1       likely take one or more of the following forms. . . She listed four, the last of  
2       which was *Using existing corridors to upgrade the subtransmission network*  
3       *to higher voltage levels to increase network strength and capability as system*  
4       *needs dictate.*

5  
6       I submit that relocating the LCP power line corridor as far away as possible  
7       from Gregg Hill Road is a way, however modest, of looking ahead 20 or more  
8       years. The existing 34.5 kV line was installed some 55 years ago. We can  
9       understand why those who planned it back then did not place the lines  
10      hundreds of feet farther away from Gregg Hill Road, thereby leaving the  
11      maximum space available for development. If they had done so, we would be  
12      reaping the benefits today. A guiding rule may well be the Chinese maxim:  
13      *The best time to plant a tree was twenty years ago; the next-best time is now.*  
14      Just so, now is the best time to install a power corridor for 2025.

15  
16      Q10. Have any testimonies, interrogatories, or responses touched on your  
17      second point concerning tax losses?

18      A10. Yes. I had an exchange of views on the tax effects of LCP with Sean Foley  
19      of DPS along the following lines.

20  
21      On April 11, Mr. Foley filed testimony that included “the property tax issue”.  
22      He testified: *Reduced property values could adversely affect property tax*  
23      *collections in certain areas and thereby lead to adverse economic impacts if*  
24      *tax rates were increased to compensate for the loss in property values. It is*  
25      *conceivable that the LCP could result in somewhat lower market values for*  
26      *some properties, especially those that are currently near*  
27      *distribution/transmission facilities, and those that would be near such*  
28      *facilities if the LCP were constructed. Two academic reports submitted into*  
29      *the record of PSB Docket 6860 discussed these potential negative effects.*  
30      *(PSB Docket 6860 Exhs. VELCO Cross Wilson-1, VELCO Cross Wilson-2).*

1  
2 Mr. Foley then quotes a Board finding from Docket 6860: *In these reports,*  
3 *properties that were located adjacent to transmission rights of way were*  
4 *found to be appraised at values that were 5 to 10% less than comparable*  
5 *properties located in areas removed from the transmission rights of way. The*  
6 *reports concluded that the negative effects, where they existed, were narrowly*  
7 *confined along a strip adjacent to the rights of way and dissipate quickly with*  
8 *distance. At least one of these studies also found that neither the height of the*  
9 *pole nor the voltage of the lines had a material impact on property values.*

10  
11 I have studied both of the referenced reports, VELCO Cross Wilson-1  
12 (VCW1) and VELCO Cross Wilson-2 (VCW2), and, with all respect to the  
13 Board's findings in Docket No. 6860, I arrive at a significantly different  
14 understanding than that: *The reports concluded that the negative effects,*  
15 *where they existed, were narrowly confined along a strip adjacent to the*  
16 *rights of way and dissipate quickly with distance.*

17  
18 VCW1 is a study titled "High Voltage Power Lines: Do they Affect  
19 Residential Property Value?" Published in the Summer 1992 issue of the  
20 *Journal of Real Estate Research*. Here is the study abstract, in full: *A survey*  
21 *administered in 1990 suggests that proximity to high voltage power lines is*  
22 *being capitalized into lower values for residential properties. Respondents*  
23 *who had appraised such property report that power lines can affect*  
24 *residential property value to varying degrees under certain circumstances and*  
25 *that the market value of these properties is, on average, 10.01% lower than*  
26 *the market value for comparable properties not subject to the influence of*  
27 *high voltage power lines. Further, their results indicate that even appraisers*  
28 *who had not appraised such property believe that power lines contribute*  
29 *negatively to property value.*  
30

1 At first reading, the abstract doesn't seem to be referring to the same study as  
2 the Board finding in Docket 6860. And maybe it isn't; maybe it refers to  
3 VCW2. Before turning to that study, it is instructive to glean more from  
4 VCW1.

5  
6 In the Introduction to the study, its authors write: *It is commonly believed that*  
7 *power lines impose a significant negative impact on the desirability, hence the*  
8 *value of, housing stock adjacent to or within a short distance of the lines. This*  
9 *perception is in stark contrast to the preponderance of research dating from*  
10 *the mid-1950s to the late 1980s which found no or negligible impact on*  
11 *property values from power lines.*

12  
13 This observation suggests that Docket 6860's reference to *negative effects,*  
14 *where they existed* may be referring to those earlier reports that are now 16-50  
15 years old. For me, the clear implication is that *the times, they are a-changin'*.  
16 And property values are, on average, 10.1% —not 5% or less—lower when  
17 they are adjacent to or near a power line.

18  
19 VCW1 reports on a survey, conducted in cooperation with the Research  
20 Department of the Appraisal Institute, in which 219 professional appraisers  
21 with RM designation, from 49 states and Puerto Rico, were asked 16  
22 questions about the subject of the study. The dwellings of all the properties of  
23 the Gregg Hill Residents fall within the study's definition of "proximate" to  
24 power lines. Some interesting responses:

- 25 ■ 84% said that residential property was negatively affected by proximate  
26 power lines.
- 27 ■ 94% said that visual unattractiveness was a major reason for the negative  
28 effect. This compares with 59% who blamed potential adverse health  
29 effects – commonly believed to be the main reason why homebuyers  
30 (unrealistically) fear to live near power lines.

- 1       ▪ In New England, the average loss in property values was 15.5%, half  
2       again as high as the average of the whole country. The sample was too  
3       small to be statistically significant, but the study's authors considered it  
4       “indeed, of interest.”

5  
6       I turn now to VCW2, a study entitled “Do High Voltage Electric Transmission  
7       Lines Affect Property Value?” in *Land Economics*, November 1995. The  
8       abstract, again in full: *The paper empirically analyzes the impact of high*  
9       *voltage (defined as 69,000 volts or greater) electric transmission lines on the*  
10      *prices of nearby single detached houses. The study demonstrates the*  
11      *importance of using the correct function specification and correcting for*  
12      *(commonly found) heteroscedasticity. We find the electric transmission lines*  
13      *do have an effect on property value, but such effects are restricted to a narrow*  
14      *band and are primarily due to the visual externalities of the transmission*  
15      *towers.*

16  
17      Obviously, this study leans heavily on sophisticated statistical methods in  
18      making its point – which is that the lines do indeed have an effect and the  
19      effect is mainly due to how ugly the transmission towers are. Since the  
20      statistical methods used in this study are far beyond my competence to  
21      analyze or even comprehend, I will limit my critique to the conclusion: *We*  
22      *find that properties adjacent to a line lose 6.3% of their value due to*  
23      *proximity and the visual impact.* This is within the 5%-10% range of the  
24      Docket 6860 finding. But the parameters of the study suggest that the values  
25      could be greater for properties in Vermont:

- 26      ▪ The “proximity” of homes that took the 6.3% loss was within 100 meters  
27      (about 300 feet). By this measure, two of the affected Gregg Hill  
28      dwellings are about three times closer to the proposed LCP lines. Clearly,  
29      most the Gregg Hill homes are on the high end of the “loss” range.

- 1           ▪ The data came from sales of single detached dwellings in four separate
- 2           neighborhoods in the Vancouver, British Columbia metropolitan area –
- 3           hardly a twin location of most Vermont residences, and certainly no kin at
- 4           all to dwellings on Gregg Hill Road.
- 5           ▪ Two of the four transmission corridors studied were 140 meters (about
- 6           420 feet) wide and each of these carried two 500 kV and one 230 kV lines
- 7           on steel towers. A third corridor carried two transmission lines and the
- 8           fourth carried one [other details not given]. In general, the study dealt with
- 9           urban/suburban dwellers who lived within sight of massive transmission
- 10          corridors that were an inescapable part of the cityscape. Gregg Hill
- 11          Residents would be hard pressed to find any similarities to their situations.

12          Q12. In your opinion, what is the relation, if any, between “undue adverse

13          aesthetic effects” and “economic effects” as set out in §248?

14          A12. In simplest terms, it is this: A “reasonable person” who finds the aesthetic

15          effects “offensive” will surely offer a lower price for such a home than for one

16          that is comparable in every other way.

17          Q13. Beside your different reading of his references, was there anything else in

18          Mr. Foley’s testimony with which you disagree?

19          A13. Yes, there were two:

- 20          ▪ Mr. Foley asserts that *conceptually the properties along existing high*
- 21          *voltage transmission lines (HVTL) would not suffer any additional*
- 22          *property value reduction due to changes in the configuration of the lines,*
- 23          *since the properties should have already experienced a reduction in value*
- 24          *due to the existing HVTL.* He is referring to the LCP proposal to take
- 25          down the one 34.5 kV line and replace it with two lines (34.5 kV and 115
- 26          kV), with one about twice the height of the existing line. I submit that this
- 27          conception defies common sense and the findings in his two referenced
- 28          reports, viz., that the visual unattractiveness of the poles is the main reason
- 29          for property devaluation.

- 1           ▪ Mr. Foley does not agree with me that the economic benefits of the LCP  
2           will be greater if property-tax losses by affected Waterbury properties are  
3           avoided by adoption of the alternative route proposed by the Residents. I  
4           submit this simplified calculation of economic benefits without and with  
5           our proposed rerouting, using Mr. Foley's figures:

6  
7           **Without Gregg Hill Residents' rerouting**

8           \$162,277       Est annual **additional** property-tax revenues from Stowe  
9                           Mountain Resort, due to LCP  
10          - 108,084       Est annual property-tax losses by affected Waterbury  
11                           properties, due to LCP, at 10% of average value  
12          = **\$54,193**       Net economic gain per year

13  
14          **With Gregg Hill Residents' rerouting**

15          \$162,277       Same as above  
16          - 000,000       Property taxes not lost  
17          =**\$108,084**       Net increase in economic benefits over LCP plan  
18                           (\$162,277-54,193)

19   I concede that this calculation is oversimplified. It considers the LCP economic benefits  
20   that accrue to only one beneficiary of the project, Stowe Mountain Resort. I submit that,  
21   while the magnitudes of the specific values may differ, whatever the total benefits of LCP  
22   are, they will **not** be reduced – **but will be increased** – if the Gregg Hill Residents'  
23   proposal is adopted and some Waterbury property taxes are not lost. This analysis applies  
24   to any changes that mitigate property-tax losses. Mr. Foley agrees with me that these  
25   losses and gains are per year. I submit that the tax losses or loss-avoidance will be  
26   realized over the life of the system, perhaps even increasing with increased aesthetic  
27   sensibilities in environment-conscious Vermont. For me, it is unthinkable that VELCO  
28   would go along with our proposal if it would reduce the essential economic benefits of  
29   LCP to the region and the state. Indeed, Kim Moulton has so testified.

1 Q14. Does this conclude your testimony?

2 A14. Yes.

3

4 Prepared by: \_\_\_\_\_

5 On May 23, 2005

6

7

8